Gepida Reptila 1100 Contents

Gepida Reptila 1100 Pedelec

1 Pair of pedals

1 pc. Battery (optional 2 batteries)

1 pc. Battery charger

1 pc. User’s manual CD

1 pc. USB-Can adaptor (Peak)

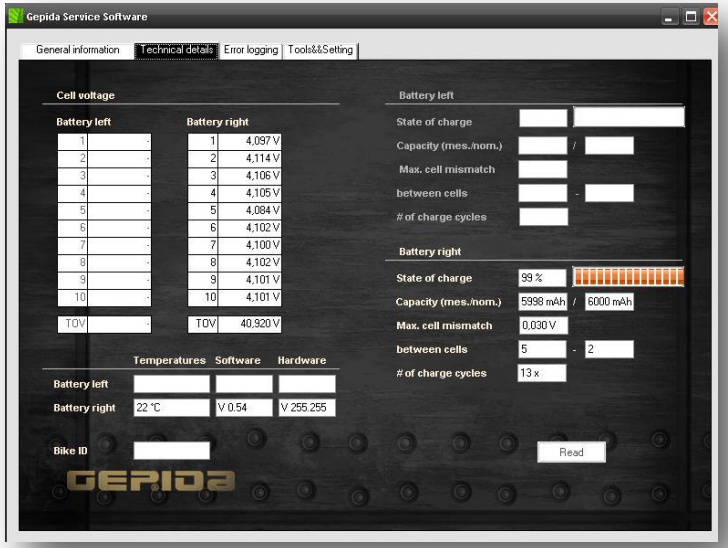
1 pc. Gepida-Binder adaptor cable (Peak)

Gepida Service and Registration Software for New Generation Pedelecs

The Gepida Service and Registration System is a multifunctional software solution with special functional elements to give useful help for its users (official Gepida dealers).

It provides technical background for a quick troubleshooting with checking the voltage of the cells and help users to define the required further technical steps.

It is a quite simple method for the Registration and Warranty processes.



Gepida Service Software
General information
Technical details
Error logging
Tools&&Setting
Error log (battery left)
Error log (battery right)
Time Description Value
1970.01.01. 0:00 ERROR POWER ON RESET
1970.01.01. 0:00 ERROR UNDERTEMPERATURE -25 °C
1970.01.01. 0:00 ERROR UNDERVOLTAGE CELL 1 260 mV
1970.01.01. 0:00 ERROR POWER ON RESET
1970.01.01. 0:00 ERROR POWER ON RESET
1970.01.01. 0:00 ERROR POWER ON RESET
1970.01.01. 0:00 ERROR UNDERTEMPERATURE -25 °C
1970.01.01. 0:00 ERROR UNDERVOLTAGE CELL 6 317 mV
1970.01.01. 0:00 ERROR POWER ON RESET
Read
GEPIDA

The Battery Management System (BMS) has been implemented in the Gepida battery packs which continuously saves the electrical parameters into its memory chip.

This log file is readable by the software and the log table includes all electrical information regarding electrical errors for the last period of battery pack in use.

This technical information helps the service points to give correct information to customers or to handle occasional customer complaints.

Content of Gepida Service and Registration Pack

1. CD with Gepida Service and Registration Software
2. USB-CAN BUS adaptor

Preparing the software

Insert CD into CD-ROM.

If you are running Windows XP or Windows XP SP 1, temporarily disconnect your PC from the Internet. This can be done by either removing the network cable from your PC or by disabling your network card by going to the ”Control Panel\Network and Dial-Up Connections”, rightclicking on the appropriate connection and selecting ”Disable” from the menu. The connection can be re-enabled after the installation is complete. This is not necessary under Windows XP SP 2 if configured to ask before connecting to Windows Update. Windows XP SP 2 can have the settings for Windows.

Update changed through ”Control Panel\System” then select the ”Hardware” tab and click ”Windows Update”.

Connect the CANUSB to a spare USB port on your PC. Information will be shown that Windows

XP has found a new hardware, see picture below.

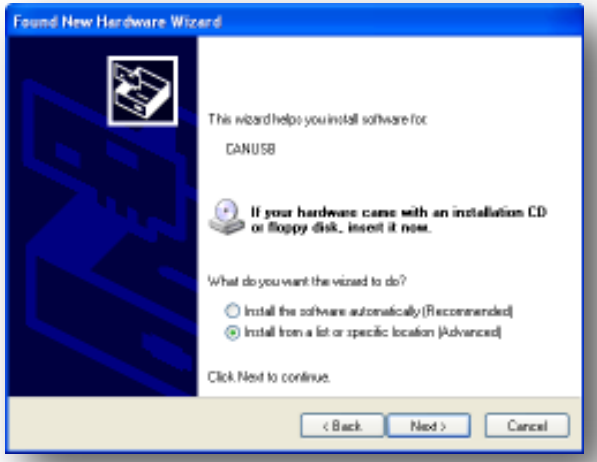
Preparing the software

This will then launch the Windows Found New Hardware Wizard. If there is no available Internet connection or Windows XP SP 2 is configured to ask before connecting to Windows Update, the screen below is shown. Select ”No, not this time” from the options available and then click ”Next” to proceed with the installation. If there is an available Internet connection, Windows XP will silently connect to the Windows Update website and install any suitable driver it finds for the device in preference to the driver manually selected.

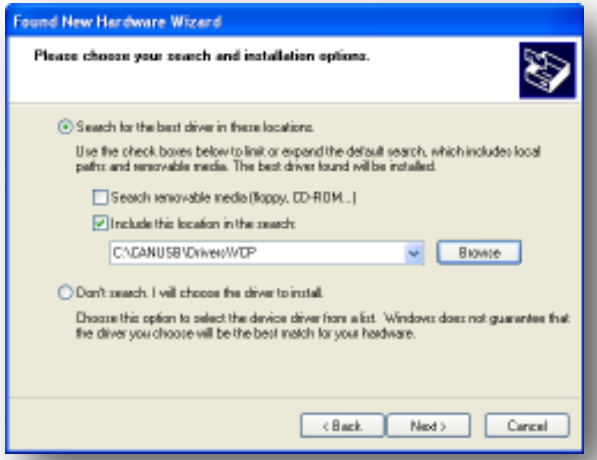
Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

Select ”Install from a list or specified location (Advanced)

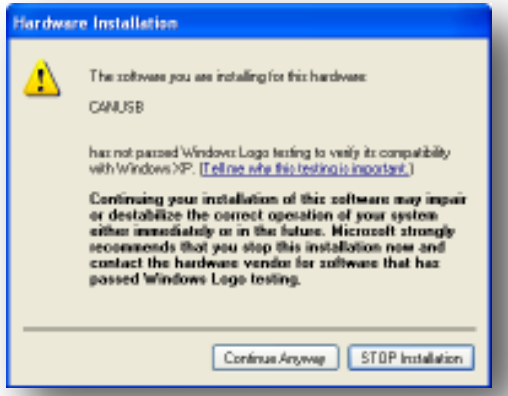
” as shown below and then click ”Next”.


Found New Hardware Wizard
This wizard helps you install software for:
CANUSB
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

Preparing the software


Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
C:\CANUSB\Driver\WDP
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

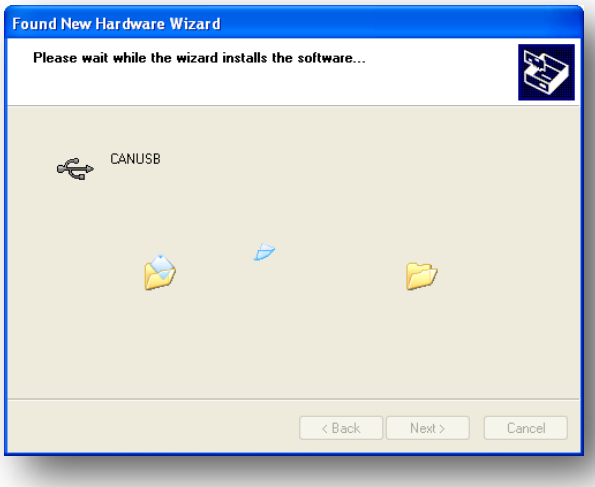
Select ”Search for the best driver in these locations” and enter the file path in the combo-box (”C:\CANUSB\Drivers**CDM_2.08.02_CANUSB**” in the example below) or browse to it by clicking the browse button. Once the file path has been entered in the box, click next to proceed (note that this path is a sample and you may have put this location elsewhere).


Hardware Installation
The software you are installing for this hardware:
CANUSB
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

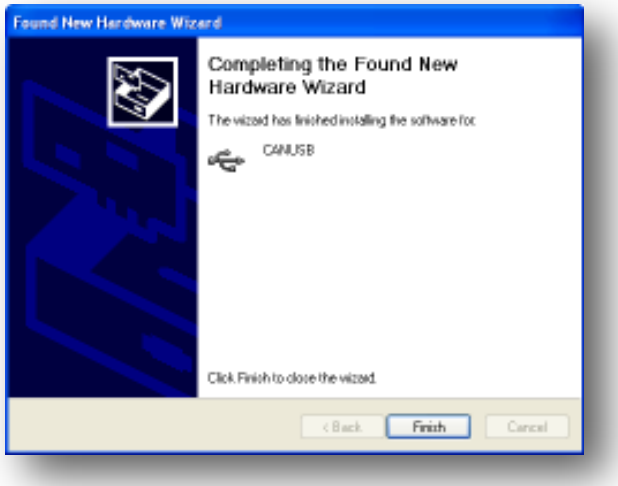
If Windows XP is configured to warn when unsigned (non-WHQL certified) drivers are about to be installed, the following screen will be displayed. Click on ”Continue Anyway” to continue with the installation. If Windows XP is configured to ignore file signature warnings, no message will appear.

Preparing the software

The following screen will be displayed as Windows XP copies the required driver files.



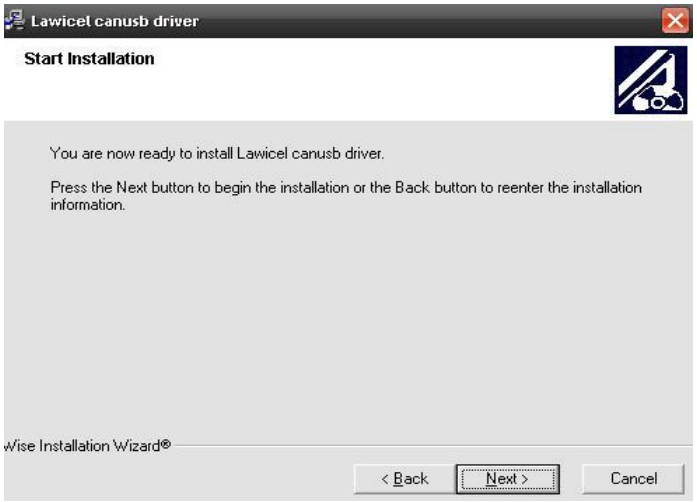
Windows should then display a message indicating that the installation was successful. Click ”Finish” to complete the installation. This has installed the serial converter. The COM port emulation driver must be installed after this has completed.

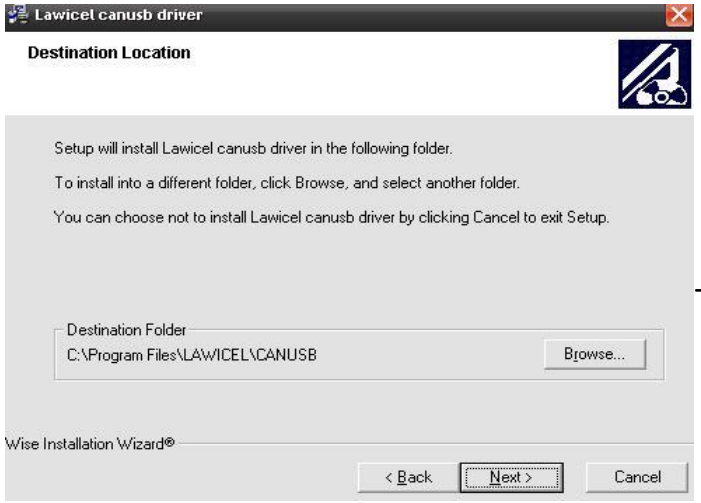


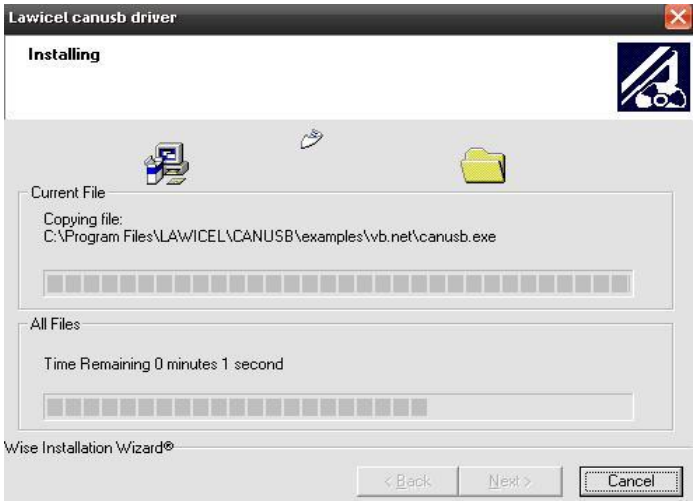
Preparing the software

After complete this process start to install „**canusbdrv018.exe**” that’s located in the folder: canusbdrv018. Follow the process on the pictures.

Lawicel canusb driver
Welcome to Lawicel canusb driver Setup program. This program will install Lawicel canusb driver on your computer.
It is strongly recommended that you exit all Windows programs before running this Setup Program.
Click Cancel to quit Setup and close any programs you have running. Click Next to continue with the Setup program.
WARNING: This program is protected by copyright law and international treaties.
Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.
Next >
Cancel


Lawicel canusb driver
Start Installation
You are now ready to install Lawicel canusb driver.
Press the Next button to begin the installation or the Back button to reenter the installation information.
Wise Installation Wizard®
< Back
Next >
Cancel

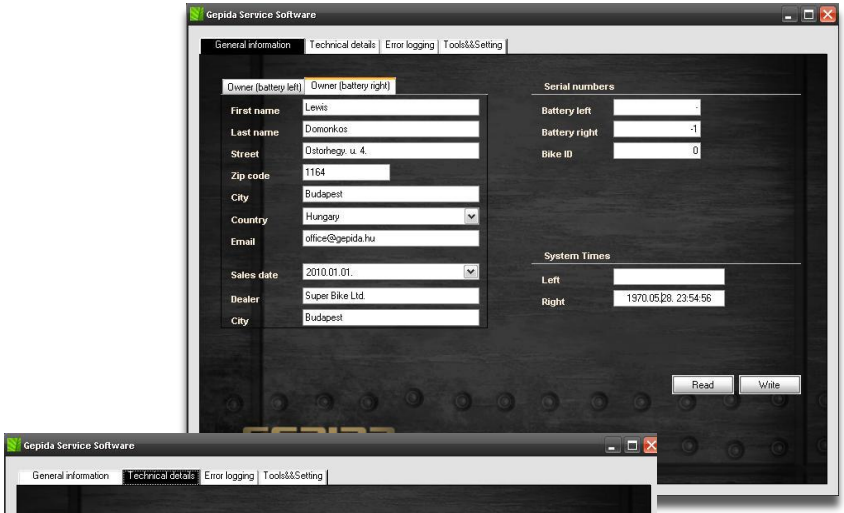

Lawicel canusb driver
Destination Location
Setup will install Lawicel canusb driver in the following folder.
To install into a different folder, click Browse, and select another folder.
You can choose not to install Lawicel canusb driver by clicking Cancel to exit Setup.
Destination Folder
C:\Program Files\LAWICEL\CANUSB
Browse...
Wise Installation Wizard®
< Back
Next >
Cancel

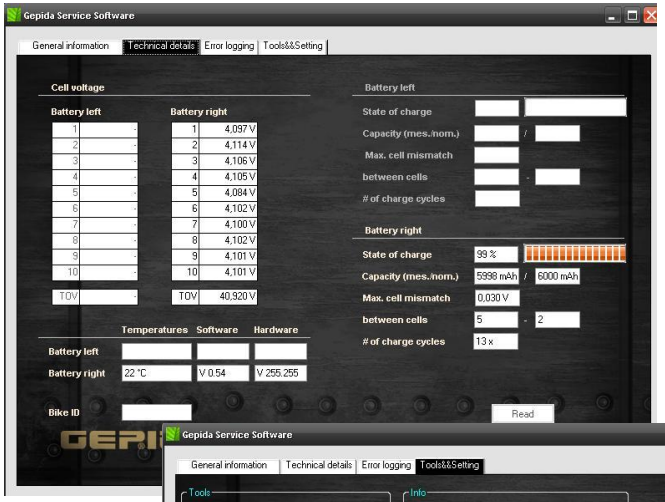


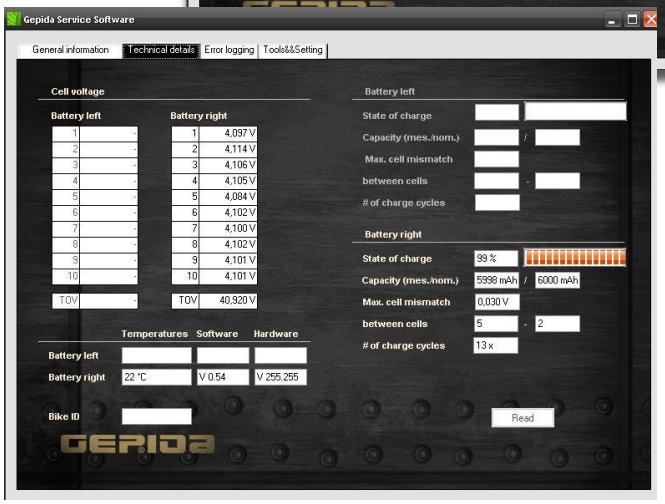
Preparing the software

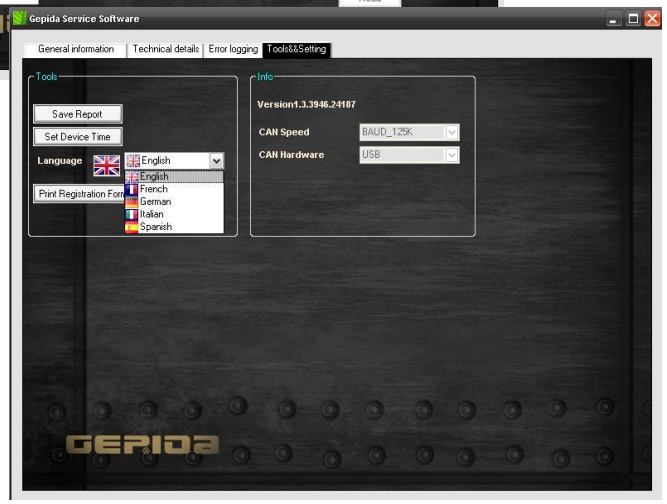
After completing the processes above the Gepida BMS Program is ready to run.

To run the Gepida BMS Program choose the „**gepida_software.exe**” that’s located in the folder: ebike_service_software_canusb









Connecting the battery pack with the computer

1. Connect the Serial side of the Binder connector to the serial port of the USB-CAN adapter.

2. Plug the USB connector of the adapter into the computer.

3. Plug the Binder connector into the battery pack or into the carrier.

4. You can also charge your battery through the bicycle's Binder connector.

Registration process

STEP 1 , Typing the datas :

When a Gepida New Generation Pedelec is purchased, the battery pack and the pedelec's new owner must be registered in the Gepida database. The registration is compulsory for the owner's good, because of warranty reasons and for future identification of the bicycle in case it got stolen. You can do this process on the first page, named: „General information". Here you can add the necessary information about the customer.

1. Choose the side (left, right or both) of the battery.
2. Fill in all the fields for the identification of the owner.
3. Fill in all the fields for the identification of the dealer.
4. Press the Write button, to store the filled data in the BMS of the battery pack. The data will be saved in the BMS's database.

Registration process

STEP 2 , Preparing the registration form :

After the identification data is written into the BMS of the battery pack, it has to be printed out for warranty reasons. You can do this process on the last page, named: „Tools and Setting”.

1. Switch to the last tab: Tools&Setting.
2. Click the Print Registration Form button.
3. The report will be saved as a text file, in the root directory of the software.
4. As usual, you can change the default filename, and the destionation directory as well.

Attention!	The new batteries are shipped in a pre-registered state, but the customer registration must be done before selling Pedelecs. After this electronic registration process the Pedelecs and the battery packs switch to registered state.

Registration process

STEP 3 , Validate the Registration Form

- Fields containing customer information.
- Fields containing dealer information.
- Fields containing bicycle and battery packs information.
- Fields for signatures.

Warning!

Signing the form by both side is very important for warranty reasons! Without the signatures, the Registration Form is invalid!

GEPIDA REGISTRATION FORM

Dear Gepida Bike Owner,

We are pleased to welcome you among the Gepida bike owners. Thank you for choosing our product.

Customer info

First name:

Last name:

E-mail:

Address:

GEPIDA CUSTOMER NOTES: After the registration process we guarantee to handle your personal data confidentially and to keep it safe. We will not forward it to any third party.

I would like to receive information and promotional materials about GEPIDA novelties.

☐ Yes

Dealer info

Dealer:

Country:

Sales date:

Product info

Serial numbers/Battery left:

Serial numbers/Battery right:

Bike ID number:

Gepida Dealers signature and stamp:

Gepida Owner's signature:

Place and date:

The Gepida team wishes you many memorable rides on your brand new pedelec.

Olimpia Bicycle Ltd. * H-1164 Budapest, Ostorhegy str. 4. * Tel.: +36 1 400-6065, Fax: +36 1 402-0084 * E-mail: office@gepida.hu
www.gepida.hu

Service process

STEP 1 , Identification :

When a Gepida New Generation Pedelec is returned, the battery pack and its owner must be identified with the help of the software. On the first page you will see the serial numbers, and the information about the owner and the purchase.

1. Choose the side of the battery you wish to examine (side of the battery what you have).
2. Press the Read button to display the data stored in the battery pack.
3. On the upper-left part, you can see all the identification data about the customer.
4. On the lower-left part you can see all the identification data about the purchase.

Service process

STEP 2 , Retrieving technical parameters :

This part will provide information which is needed for servicing, such as cell voltage values, overall voltage of battery, software and hardware versions, and the number of charging cycles.

1. Click on the second tab named Technical details.
2. Click the READ button to display the data stored in the battery pack.

- On the upper-left part you can see the voltage value of each cell. When the battery is in good condition the TOV number is between 40-42 V.
- Every cell should have a minimum voltage: 3,5V.
- A battery contains 10 cells.
- There can be difference between the cell's voltage that will be levelled up by charging.
- No one of cell's voltage can be lower than 3,5V. In such a case the battery can not work properly.
- If the voltage is under 3V the software is incapable to display the voltage data.

Notification!

Make sure, that the battery is always fully charged when not in use, to maintain a prolonged durability!

Service process

STEP 2 , Retrieving technical parameters :

This part will provide information which is needed for servicing, such as cell voltage values, overall voltage of battery, software and hardware versions, and the number of charge cycles.

- On the lower-left part you can see the temperature and the version number of the battery pack. (software/hardware)

  The value of „temperatures" display the inside temperature of the battery. If this value is too high or too low the battery is not possible to be charged until its temperature reaches a value in the optimum interval again.

- On the upper-right part you can see the state of charge and maximum cell mismatch, and the number of charging cycles.

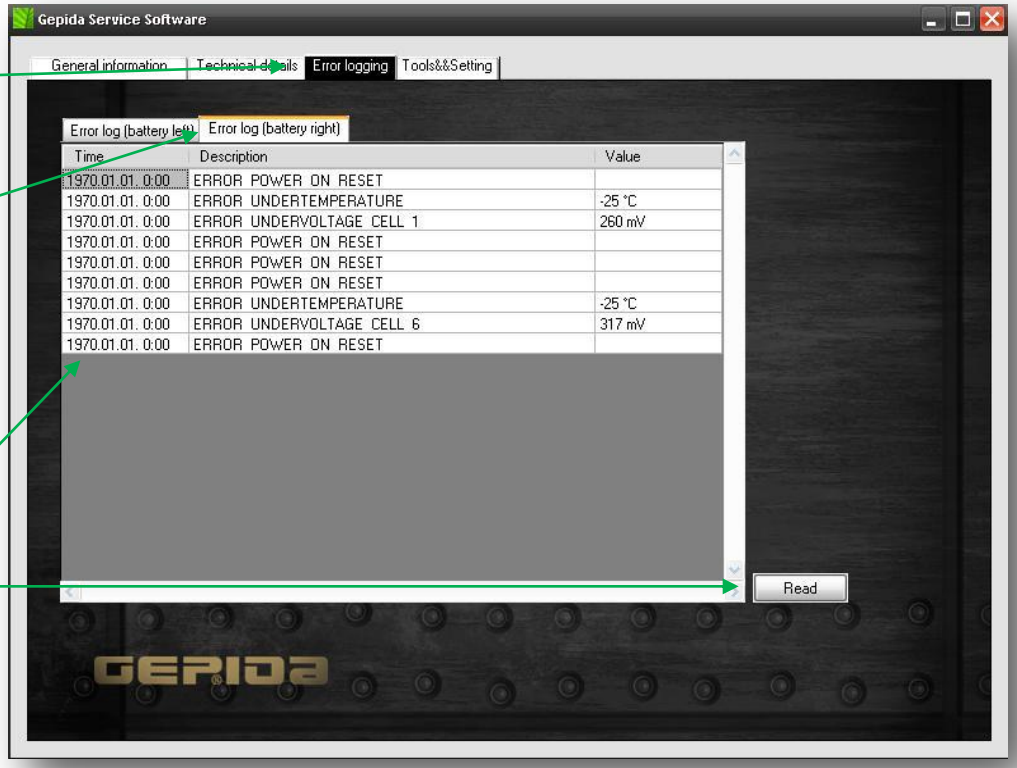
Service process

STEP 3 , Reading the error log :

On the third page, you will see the error log of the battery pack. It can contain such electric problems from the past like under- or overvoltage of certain cells or under- and over temperature of the battery. The log file stores all discrepancies that might have occurred.

1. Click on the third tab named Error logging.
2. Choose the side of the battery you wish to examine (side of the battery what you have).

- Click the READ button to display the data stored in the battery pack.
- It the table you can see the log history, sorted by time.

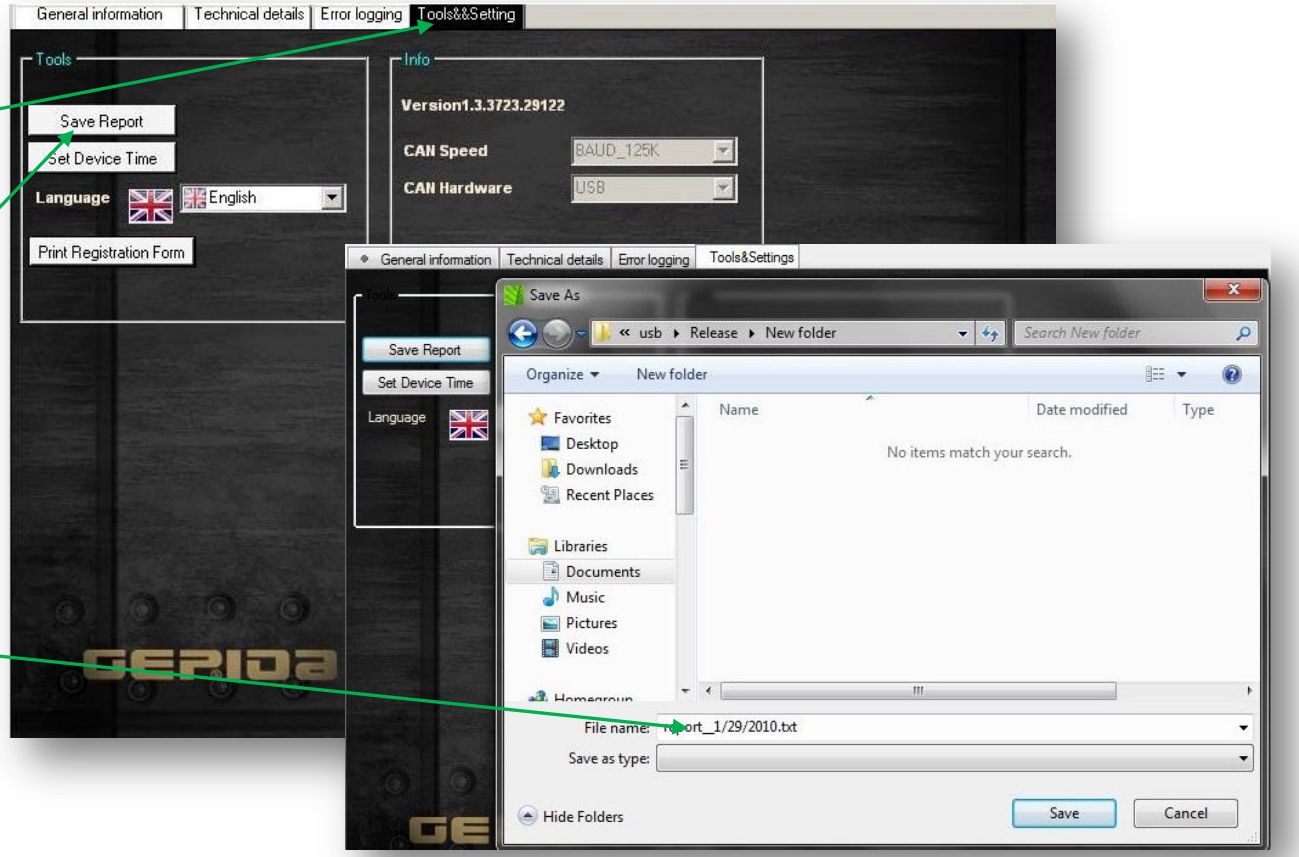


Service process

STEP 4 , Creating the report file :

On the fourth page, you can create a report file, set the device time of the battery pack's BMS, set the language and see some background information about the software.

1. Click on the last tab named Tools & Settings.
2. Click the SAVE REPORT button.
3. The report will be saved as a text file, in the root directory of the software.
4. As usual, you can change the a filename and the destination directory as well.



Service process

If the dealer cannot help to solve the problem, we will need
the report file (maybe the battery too) you created to perform further diagnostics. For further details about the technical values, check Appendix A: Troubleshooting.

Caution!

Make sure to read the data on all three pages (General Information, Technical details, Error logging) before saving the report file, otherwise the report file will contain insufficient or false information!

Warning!

Do not try to disassemble the battery pack or the control unit! Not only is it dangerous but it also voids the warranty of the set.

How to handle the battery pack

1. Grab the battery pack in the position shown on the picture. You just have to see the „GEPIDA” sign on it.

2. Push the battery pack firmly into the console, until you hear it clicking.

3. Use the lock to secure the battery pack in its place. You are able to remove the key only if the lock is closed. The picture shows the lock in closed position.

Notification!

Make sure that the lock is always closed during riding the pedelec. Check it each time before using the bicycle!

About the battery

1. Do not touch the contacts of the battery
   with any objects as it might cause a short circuit

2. Do not spray water on the battery or immerse the

   the battery in water

3. Do not throw the battery into fire

4. Do not leave the battery in an automobile

5. Do not drop or shake the battery

6. Do not use the battery if it is damaged

7. Do not disassemble the battery

8. Do not use the battery on other electrical products

Battery Characteristics

This Gepida battery is a large-capacity, high performance lithium-ion (Li-ion) battery that outputs large current. More compact and lightweight than the conventional nickel cadmium (Ni-Cd) and nickel-metal hydride (Ni-Mh) batteries as well as it can keep a large amount of electricity. Moreover, conventional batteries suffered from the memory effect, that is a symptom wherein batteries that were charged repeatedly before being entirely discharged each time had an apparently strong decrease in capacity over the time. In contrast, the Li-ion battery does not have the memory effect, so you can charge it anytime at your convenience.

Battery does not operate well in extremely hot or cold environment. During charging cycles, the battery goes through a chemical reaction which is greatly influenced by temperature.

A battery is subject to self-discharge even if it is not used. The loss suffered due to self-discharge can be recovered by charging the battery before use.

Sometimes, the travel distance with a new battery might be shorter, but this will improve by using and charging it 2 to 3 times.

In a cold environment, below approximately 10 °C, the output capacity of the battery decreases, leading to a shorter travel distance or a reduced power assist. Its capacity automatically recovers by the rising temperature. Even a high-performance Li-ion battery will suffer a gradual decline in its capacity after repeated charge-and-discharge cycles (appr. 800 cycles), necessitating its replacement. This is the nature of the battery and is not considered as a malfunction.

Battery characteristics

Avoid charging the battery at high temperatures, such as exposed to direct sunlight or near hot stove, or immediately after operating the battery. These conditions can shorten the battery life or travel distance. If the temperature of the battery increases significantly as a result of direct heating, it might become unusable.

The self-discharge rate is lower than that of the conventional batteries. Nonetheless, a battery that is completely discharged will suffer accelerated deterioration. If you do not ride the Pedelec for a period of 3 months or more, remove the battery from the vehicle and place it apart. Store it indoors, in cool (10-20 °C), dry area.

The Li-ion battery does not operate well at high temperature.

Do not store the battery at high temperatures such as inside an automobile exposed to direct sunlight or near to any kind of heating device.

Do not charge a battery that is fully charged.

The necessity of replacing the battery depends on the usage of the pedelec, external temperature, and charging method. If the travel distance per charge becomes considerably shorter than normal; it is time to replace the battery.

Battery characteristics

After 350 to 450 charging cycles the capacity of the battery decreases to approximately the half of the new battery. This average is calculated on the basis of a usage at general road conditions, and an annual 200 charging cycles at 25 °C.

The necessity of replacing the battery depends on storage conditions, charging temperature, riding conditions, and external temperature. The replacement interval might be shorter than the above stated if the battery is used under unfavourable conditions.

The Li-ion batteries are recyclable. When a used battery is due for replacement, you can have it recycled by the dealer. By taking this little effort, you can contribute to a sustainable development of the planet.

Before charging the battery

Do not use the power cord if it is damaged.

Keep the charger away from pets and the reach of children in order to avoid injuries.

Never use the charger to charge other electrical appliances.

Do not handle the power plug for charger with wet hands nor touch the contacts of charger.

Do not touch the charger or the battery for long time during charging.

The temperature of the charger might reach 40 °C to 60 °C during charging.

Be sure to use the original Pedelec charger, because other chargers a likely to cause unrecoverable damage to the battery.

Before charging the battery

Place the charger on a flat and stable surface.

Avoid dropping the charger.

Do not place any objects on or cover the charger during charging.

Do not step on the charger.

Make sure the contact points of the charger and the battery are clean and dry.

Do not touch the contact points with metal object.

Unplug the charger when not in use.

Do not expose the charger to water, moisture or excessive humidity.

Do not charge the battery near gasoline or other flammable materials.

Charging

The optimum temperature for charging the battery is between 15 °C -25 °C. The internal temperature of the battery can be higher immediately after a ride or if the battery is exposed to direct sunlight. This can result in the internal temperature of the battery exceeding the specified starting charging temperature, which prevents it from being charged. To cool down the internal battery temperature, to a level that enables the charger to start charging, can take up to approximately 3 hours when the room temperature is 30 °C.

.

Choose a location that meets the following conditions for charging:

Flat and stable surface

Dry place

Well-ventillated and without excessive humidity

Out of reach of children or pets

Room temperature between 15 °C and 25 °C

Even though charging might start normally, it will terminate automatically in case the temperature falls below 20 °C, or rises above 30°C.

Charging

There are two ways of charging:

1. Connecting the charger to the battery directly.

2. Leaving the battery in the console of the pedelec, and charging it via the carrier console.

The remaining capacity of the battery pack can be checked any time by pressing the button on the left side (as shown in the picture).
Each LED indicates about 20% of the overall capacity of the battery pack.

If the battery pack is on the charger, it indicates the charging process with the green LEDs „running”. When the LEDs stop running, it means the process has ended and the battery pack is fully charged.
Now you can unplug the charger.

The batteries are protected against overcharging.

Specifications of Gepida Battery Pack

Item	Specification
Nominal Capacity	6000 mAh
Nominal Charging Voltage	42 V
Nominal Output Potential	36.5 V
Charging Current	1400 mAh
Charging Time	4.5 hours
Operating Current Range	max. 10 A
Weight	2.44 kg
Dimensions	Lenght: 173 mm Width: 100 mm Height: 105 mm
Operating Temperature	Charge: 0 to 45 °C
Storage Temperature	10 - 20 °C

Specifications of Gepida Battery Pack

Temperature Dependence of Discharge Capacity				
Discharge Temperature	-10 °C	0 °C	25 °C	45 °C
Relative Capacity	50 %	70 %	100 %	100 %

Temperature Dependence of Charge Capacity				
Charge Temperature	-	0 °C	25 °C	45 °C
Relative Capacity	-	80 %	100 %	100 %

Specifications of Accessories

3 Phase Motor

Nominal Input Potencial:	36 V
Maximum Input Power:	250 W
Weight:	3.2 kg

Energy Bus connector

Support Nominal 36 V DC and High Speed Can-Bus interface

High Speed Can-Bus interface (125 kBits/s)

TJA 1040 (max.: 1 Mbit/s)

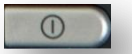
Current Consumption in sleep mode

Less than 500 µAmps

Quality requirements

According to ISO 9001

Features of the Control Unit

1. To turn the control unit on, press the lower-right button and hold it for one second. 

2. If the bicycle icon is flashing, that means the battery pack is not fitted properly. This means you will not have the assistance! In this case the remaining distance meter is empty as well.

3. If the bike sign is permanently visible and you see a remaining distance value, the assist system is ready for operation. Now you can adjust the assistance level for your convenience. Use the left (decrease) and right (increase) arrow buttons. However you can also change the assist level during riding.

4. Final step, you should check the light and set them on\off\auto mode with the lower left button.

5. Now you are ready to go!

Features of the Control Unit

1. To reach the secondary functions of the Control Unit, press the middle button and hold it for 1 second.

2. Now, by pressing the left arrow button, you can switch between the following data (holding it for 1.5 sec to reset):

   - Total distance
   - Average speed
   - Maximum speed

3. Pressing the right arrow button will start the stop-watch and pressing again will stop it. To reset the stop-watch, hold the button for 1.5 second.

4. To return to primary functions, press the middle button again (do not hold it).

5. For further details about the control unit, check Appendix B.

Gepida Automatic Reduction System

There are 10 different assist levels for you to be able to use the pedelec always at your convenience. If the battery charge status is less than 35% the Gepida Automatic Reduction System lowers the assistance ratio down to the optimum level ensuring maximum range with assistance. When the system turns on, the change in the assist level becomes immediately visible on the display.

GPDS system

The assistance is switched on by the speed sensor soon after you start pedaling the bicycle. So when the pedelec starts moving, you will instantly experience the assistance. The reason why the assistance does not start immediately when pressing the pedal is to avoid accident for instance in case you just put your foot back on the pedal at the traffic light. That is why the system is set in a way that the speed senson must capture a minimal speed to turn the assistance on. When the assistance is on, ride the bicycle just like a regular one. The power and the duration of the assist force depends on two factors:

1. How strong you push the pedal.

This is captured by the special torque sensor, and is very important at accelerations, when usually a higher pedal force is needed, so the assist force will be higher as well.

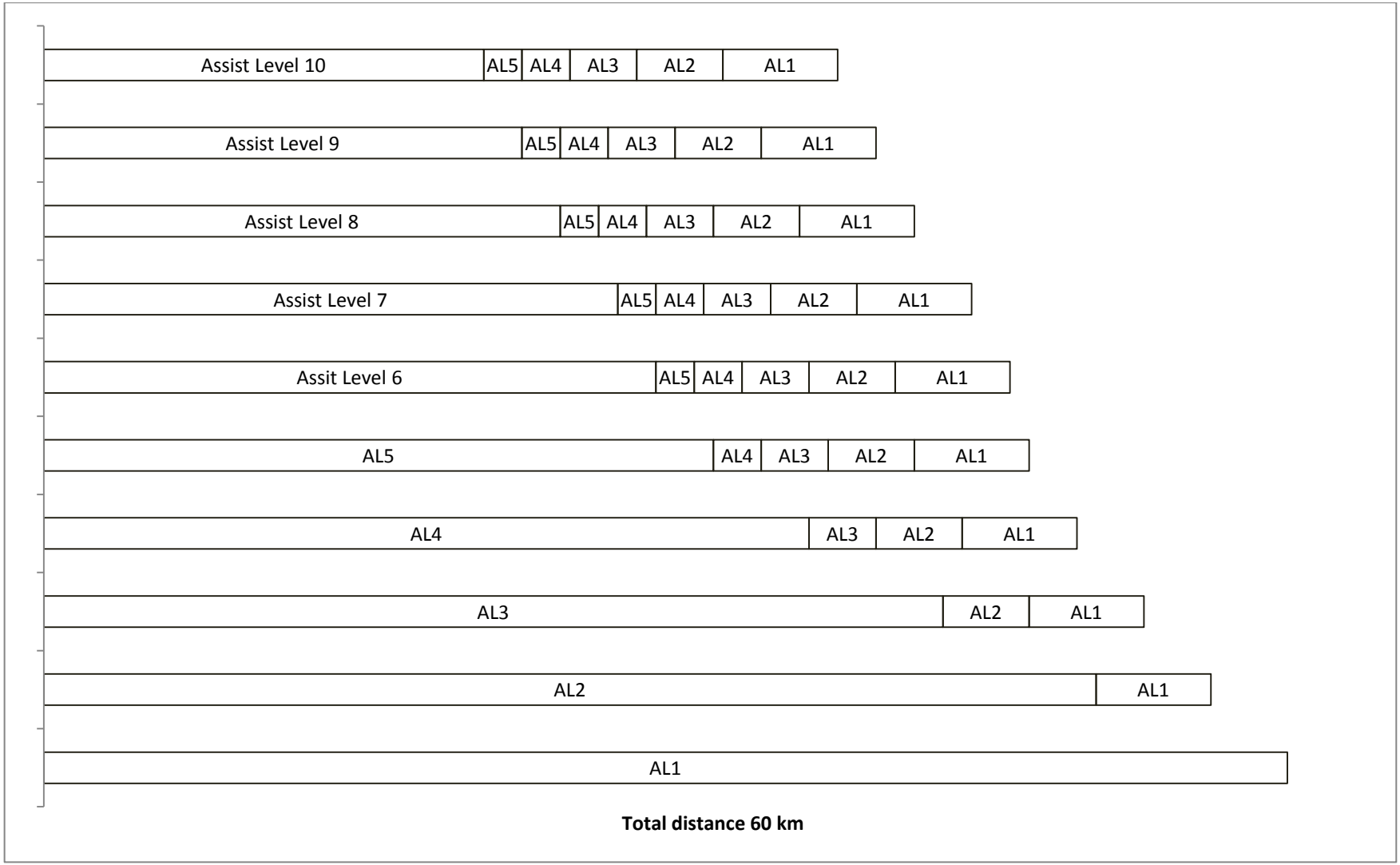
2. Which assist level the pedelec is used on.

This factor is more important after the starting period, when you want to keep a desired speed during the ride. If you wish a higher travelling speed, just raise the assistance level on the control unit. The torque sensor will still work at this part though, so if you press the pedal harder, the assist force will raise allowing an easy acceleration.

Warning!

If the assistance level is set to maximum or near, be cautious when accelerating! In this case, the assist force is really high that may „pull” the bicycle from under you, which may lead to accidents and/or injuries.

Range at different assist levels



Conditions that can influence travel distance

Frequent stop-and-go

Heavy loads

Steep uphills

Poor road conditions

Strong headwins

Low tire inflation pressure

Low ambient temperature

Low battery performance

Winter Useage

The nature of the Li-ion batteries changes when used and stored at low temperatures. In such a case the capacity of the battery diminishes compared to its nominal capacity (at the optimal temperature 15-20°C). This change can be observed already during the first ride under 10°C that may manifest in the reduced range of the pedelec or in the automatic switch off the assistance on lower assist levels (1-4). The capacity of the used/stored battery reduces by approx. 30-60%. at around 0°C.

Therefore in wintertime you shall consider the following few easy steps below to extend the riding experience provided by your GPDS pedelec.

Winter storage: The recommended conditions to store the battery are between 15-20 °C in dry place, thus the battery is immediately ready to be used when charged. It is also possible to store the battery at low temperature.

Winter charging: Even if the battery was used or stored in cold, it must be let reaching and keeping room temperature (approx. 20°C) for approx. 1 hour before charging. The charging at inappropriate temperature can cause low efficiency and ultimately damage the cells of the battery. The recommended external temperature for charging is approximately 20°C.

Winter usage: If you are using your pedelec in cold temperature, please make sure to put the battery into the console only right before leaving, until then try to keep it at a warm place as much as it is possible. When riding around 0°C the battery cells cool down below optimal temperature in about 1 hour, that is enough to travel 10-15 km by using the 10th assist level.

During this shortened time you should use the assist system on the maximum assist level (10) in order to take advantage of the optimum battery capacity. With the temperature decreasing the output efficiency of the battery is proportionally reduces.

If you interrupt your ride try to take the battery to a warm place until you continue your ride.
It is recommended to use only one battery at a time and keep the other at warm place if possible.
The decrease of the range can be observed at every assist level, while in lower assist levels the battery safety functions might switch the assistance off.

Gepida Security System

The GPDS Software contains all specialized security tools that are necessary for a safe ride.

The electric engine switches off at 25 km/h and the assistance stops as at the same speed as well.

Lights remain in operation for about 1 hour after the battery has been discharged.

The engine turns off when the temperature reaches a limit value so to avoid the irreversible damage of the engine.

You might notice during the ride that the engine makes a quiet noise; this is normal and not considered a malfunction.

GPDS Assist System Description

The Gepida electric bicycle uses the following levels of assistance:

Zero Assist Level: At this stage there is no electric power assistance, but all other functions are available on display (lights, speed, etc).

1-7th Assist Level: This is the ideal interval for urban use, and longer-term biking. Level 1 supports approximately 10% power assistance which is the most economical and energy saver option for planning a longer journey. From level 1 up to 7th assist level increases steadily, the power assist provides a convenient and energetic biking. Certainly, the use of higher assist level decreases the maximum range.

8-10th Assist Level: These 3 levels should be used when the terrain conditions are harsher (eg. uphill). The 3-step Dynamic Allocation: Low, Middle and High. There is no time delay on these levels, which means that even the slightest pedal force is enough for a powerful assistance but it is also the least energy-efficient option.

Operation of the lamps

There are two operation modes of the lights:

1. Normal operation: When this is on, the lights are continuously on.

2. Automatic mode: When this is on, the switching of the lights is controlled by the built-in sensor.

- You can switch between the three states (on\off\auto) by pressing the lower-left button on the control unit.

- The actual status icon of the lights is shown on the left side of the panel.

- The light sensor is placed between the two lower buttons. Keep it clean and dry for optimal operation!

- For safety reasons, the rear light will remain in operation for 5 minutes, after you have stopped and turned the assist system off.

Special issues regarding the pedelec

Basically a pedal assisted bicycle (Pedelec) can almost be used as a regular bike. However, there are a few things that you should keep in mind, if you have a pedelec:

- Keep your battery pack(s) charged if possible, to have the advantage of the assistance.

- You have the option to leave your battery pack(s) at home, thus using your pedelec as a normal bicycle, but you have to mind the following:

1. If there is no battery pack in the bicycle, lights will operate only with the help of the dynamo.

2. Since the battery pack is required for the control unit to work, you will not even have basic information available such as time, actual speed, distance ridden, etc.

- Brake efficiency might be different to a normal bike.

Attention!

Since the assist system means a significant extra weight to the bike, in some cases the performance of the brakes may be less, compared to a normal bike. Always keep this in mind when riding!

Things to do before starting

1. Check the charge level of the battery pack(s) and choose your route accordingly.
2. Ensure the connections of the battery pack and the consol are clean and dry!
3. Put the battery pack into the consol, then check if it is fastened (mind the holders of the carrier).
4. Lock it with the key.
5. Open the rear wheel-lock with the same key (lock is optional).
6. Turn the control unit ON (by pressing and holding the lower-right button).
7. Check if the control unit operates properly.
8. Check if any of the warning-signs is lighting (if it is so, read Appendix A: Troubleshooting for further instructions).
9. Check the lights (it is in automatic mode by default, but you can change it with the lower-left button).

How to start to ride the Pedelec

1. After raising the stand, mount the saddle, and place one foot on the pedal in order to prepare for the start-off. Before start, check the traffic around you and slowly press on the pedal. The assist system will start off immediately when the speed sensor captures the motion of the pedelec.

2. Practice riding in a safe location such as an empty lot or public park. Familiarize yourself with the characteristics of the power assist system before riding in real traffic conditions. Start with the lower assist levels in order to gradually get used to riding a pedelec.

Do not ride on one pedal (to get the bicycle in motion and mount once in motion). It can cause injury and accident.

Cleaning

Do not expose the Pedelec to direct water pressure such as by washing it with a steam cleaner or high pressure water hose.

Never apply wax to rubber parts such as tires and brake shoes. This can impair the effectiveness of the brakes.

To clean the battery area use a dry cloth to wipe the dirt off. Never use water to clean the battery.

Do not polish the contact points nor use any object to clean them. This can cause damage, injury or electric shock.

Never use gasoline, or highly acidic cleaner, or others solvents. They can cause the material to crack.

Appendix A: Troubleshooting

Symptom	*Advice*
The Control Unit would not turn on (After pressing and holding down the lower-right button).	- Check if there is a battery pack in the bicycle if so, make sure the battery pack is locked in the console properly. - Check the battery pack is not discharged. If it is, change it to a recharged one.
Bicycle icon is flashing and the charge level meter is empty on the Control Unit.	- No communication detected between the bike and the battery pack. Take the battery pack out and put it back again.
No assist power experienced. (The bicycle icon is visible and the charge level meter is not empty).	- Check the assistance level meter on the Control Unit. If it is empty, increase the assist level with the right arrow button. - Reset the torque sensor. (see at Appendix B)
The assist power becomes insufficient in a low-temperature environment in winter.	- If the battery temperature becomes low, a safety function is activated to prevent the battery from deterioration.

Symptom	*Advice*
The assist power becomes insufficient in a high-temperature environment during summer.	- If the battery temperature becomes high, a safety function is activated to prevent the battery from deteriorating.
The assist power becomes insufficient when riding on steep uphill continuously	- When riding on steep slope continuously, the battery temperature increases and it may reach a temperature level at which the safety function is activated to stop the discharge method to prevent the battery from deterioration.
Assist power weakens rapidly (within normal circumstances).	- The battery pack may have become deteriorated.
Remaining distance seems to be decreasing rapidly.	- Decrease the assist level of shift to a lower gear to decrease pedal torque.

Symptom	*Explanation, advices*
Lights do not operate in on\auto mode, plus the red Lamp Indicator icon appears.	- The cable connectors by the front or rear light may have become loose. If it has, reconnect the loose cable.
Lights remain in operation in a luminous environment while in auto mode.	- Check if the light sensor built in the control unit is not wet or dirty. If it is, please clean it.
No assist power experienced, plus the red motor indicator icon appears.	- Check if the cables by the front hub are connected properly, if not, reconnect the loose cable.
Charging does not work, plus the red charger indicator icon appears.	- Your charger might have to be replaced.

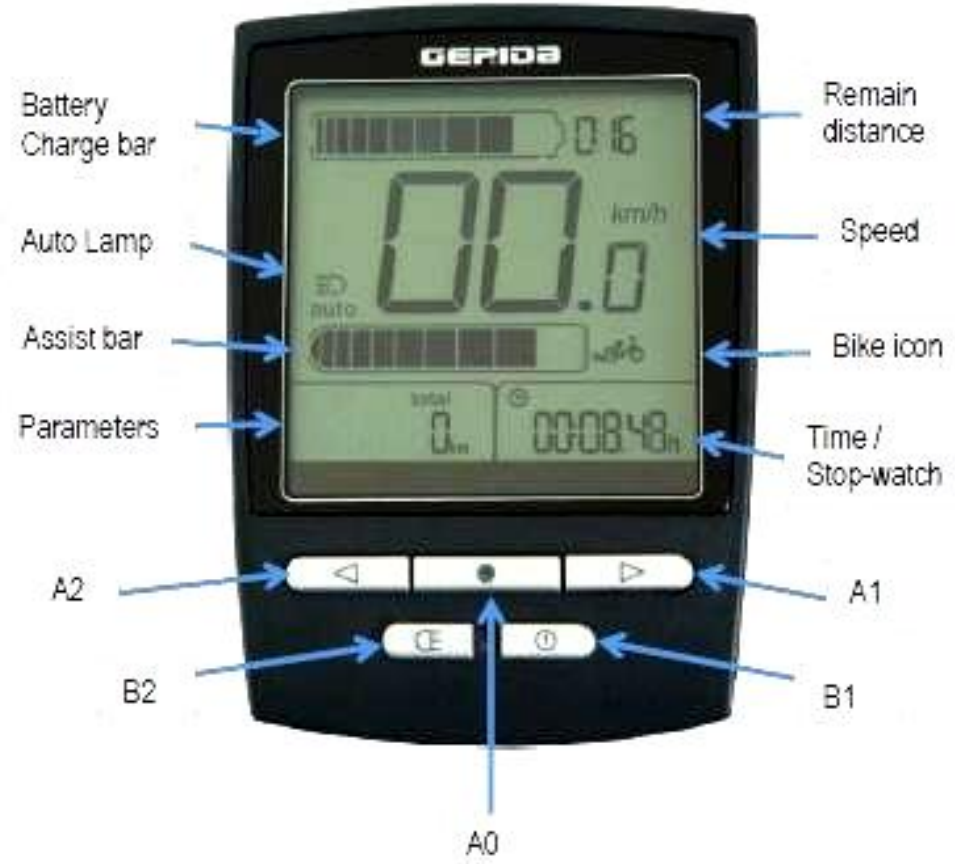
Symptom	*Advice*
No assist power experienced, plus the red sensor indicator icon appears.	- Reset the sensor. (Check Appendix B) - The torque sensor might have gone wrong or needs recalibration.
The assist power seems unusual or wobbly, plus the red sensor indicator icon appears.	- Reset the sensor. (Check Appendix B) - The torque sensor needs recalibration.
The red LEFT battery indicator icon appears.	- Electric failure occurred in the left side battery pack.
The red RIGHT battery indicator icon appears.	- Electronic failure occurred in the right side battery pack.

Symptom	*Advice*
Reduced capacity of the battery. Decreasing range.	- The battery pack has exceeded its guaranteed life period. The capacity will be lower than 70%.
The battery pack is unchargable and the cell mismatch value is bigger than 0.2 volts.	- Temporary short-circuit may have occurred in the cell(s). If the problem persists, the battery pack needs to be replaced.
The battery pack is unchargable and one or more of the cells has extreme voltage value (0,5 volts difference to the rest).	- Temporary short-circuit may have occurred in the cell(s). If the problem persists, the battery pack needs to be replaced.

Attention!

In case you encounter any kind of problem that is not listed in this troubleshooting or you can not find the answer to your question in this manual, please contact your dealer for further help and information!

Appendix B: Control Unit function chart



Assist bar: 1-7 blocks: Normal usage for city biking (larger range)
8-10 blocks: Heavy usage for uphill riding (smaller range)

Primary functions of the display

Press for 1 sec to turn the display on

Current functions:

Remaining range

Speed

Bike icon

Assit bar

Parameters

Watch/Stop watch

Assist bars

Press for 1 sec to turn off the display

Change assist level by pressing:

Secondary functions of the display

(secondary functions are accessible from primary functions screen)

Press for 1 sec to access secondary functions

Stop watch

Press to start/stop stop-watch

To reset stop-watch press it for more than 1.5 sec.

Secondary data *(total-, daily mileage, average-, maximum speed)*

Press to switch to secondary data.

To reset each figure hold it for more than 1.5 sec.

Press to go back to basic function.

Settings (3rd level functions) of the display

Press for 10 sec to access 3rd function

Press to decrease press to increase the value.

Set time: *hour (hh)* min (mm)

Press to set time value

Press to change hour/min/sec

Press to set lamp mode

Lamp mode: *Auto mode, On, Off*

Press to set auto mode/on/off

Press to set display backlight

Display backlight

Settings (3rd level) functions of the display

Display backlight:

Press to decrease and press to increase the value.

Press to set mileage unit.

Set unit: *km - mile*

Press to set km/mile units

Press back to Primary functions

Service Function A

The Service Function is accessible from Primary Functions screen

Press and hold together for more than 2 seconds.

Sensor-setting

During the sensor-setting the sensor indicator is flashing 3 times.

After a successful sensor-setting the indicator light turns off,

however if the error persists, the light remains on.

Service function B

The Service Function is accessible from Primary Functions screen

Press and hold together for more than 5 sec.

LCD test

To turn all display segments on press

To quit to Primary Functions press

After 10 seconds the Service Function automatically switch to Primary Functions screen.

Indicator LED’s

The Indicator leds can indicate the below malfunctions.

Malfunctions

Sensor Failure

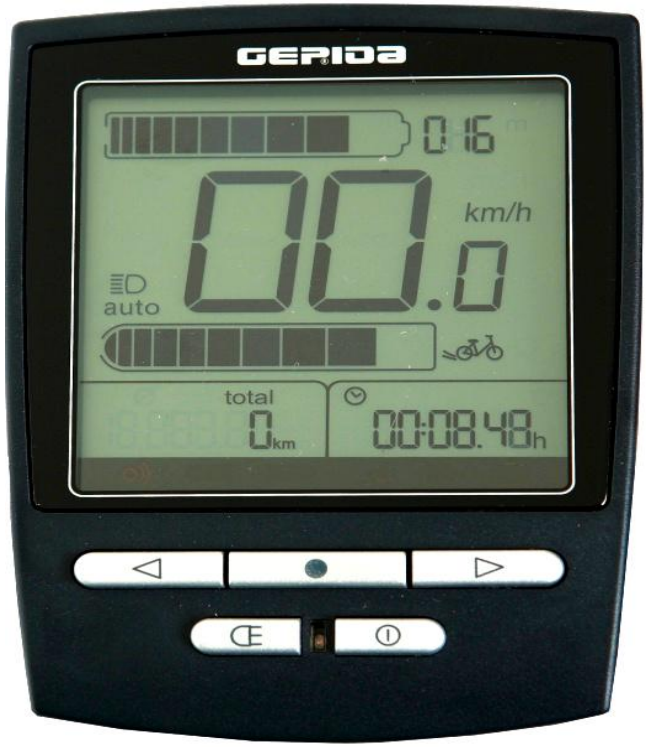
Battery Left Failure

Battery Right Failure

Charging Failure

Light Failure

Motor Controller Failure



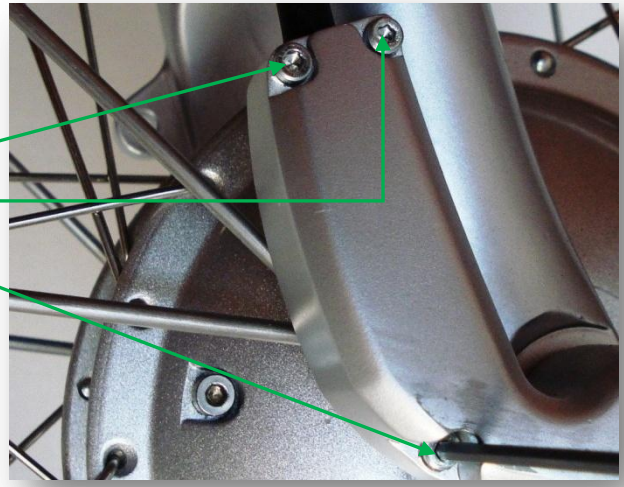
Charging

The Charging mode on the screen.

Battery Charge bars until the battery is fully charged.

Appendix C: Removing the front wheel

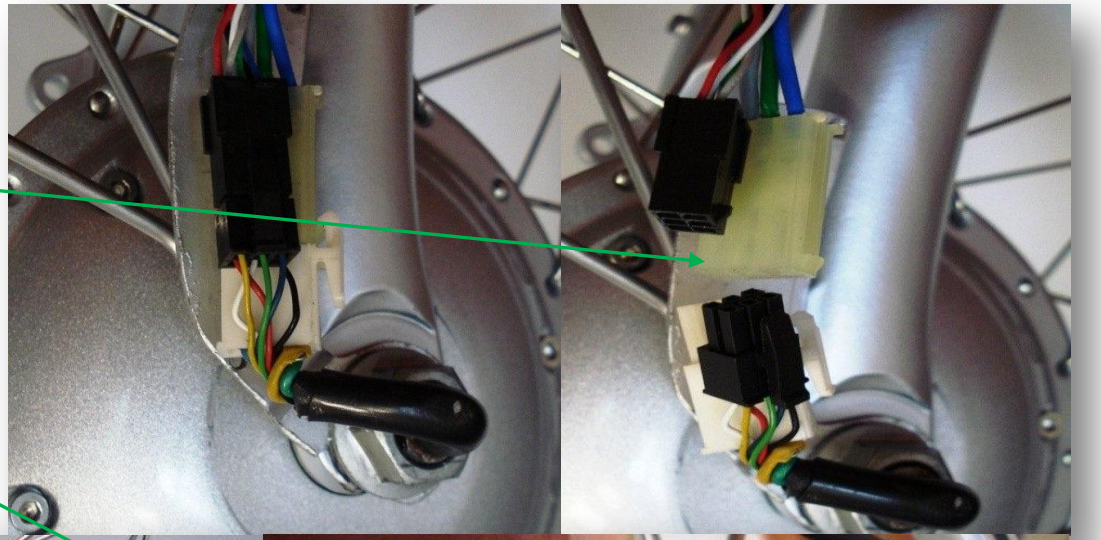
1. Prepare the bike for the wheel removal.
2. Set the brake cable free.
3. Take the motor connector box off, by removing the (3mm Torx) screws.

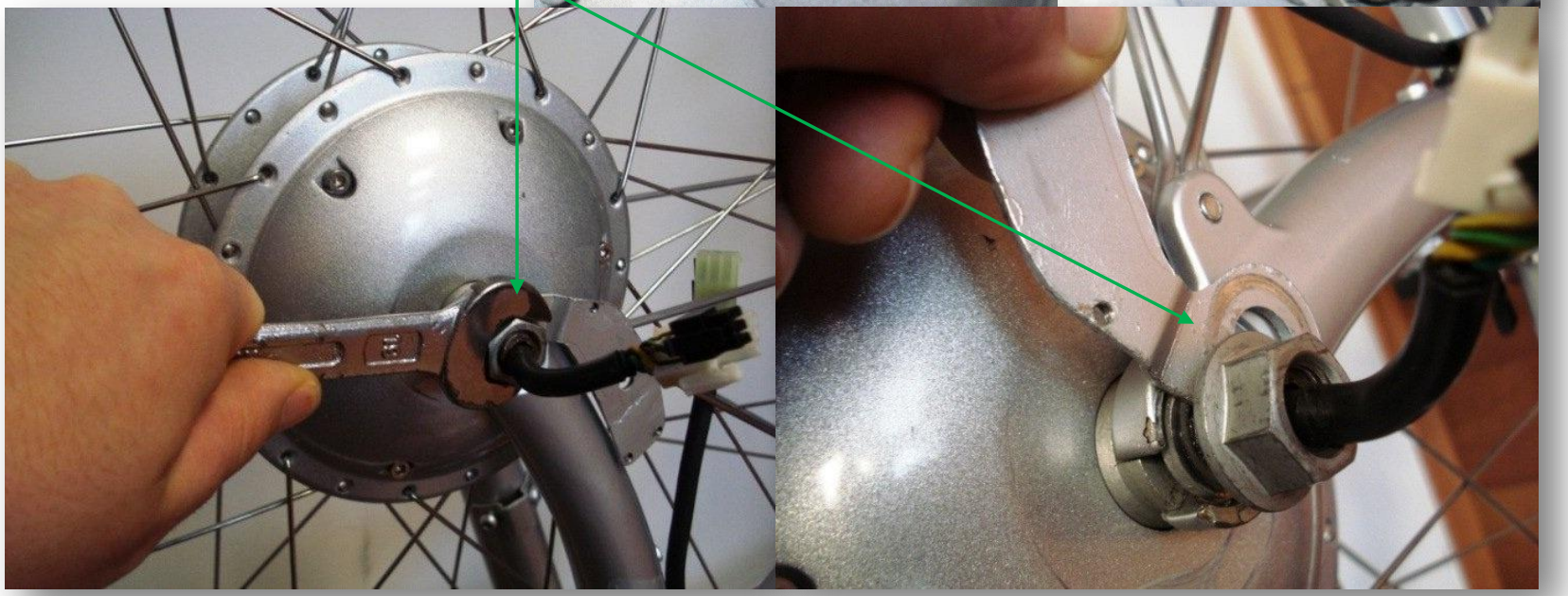


4. Disassemble the connectors by pressing the connector clips.

5. Loosen the wheel screws on the connector side.

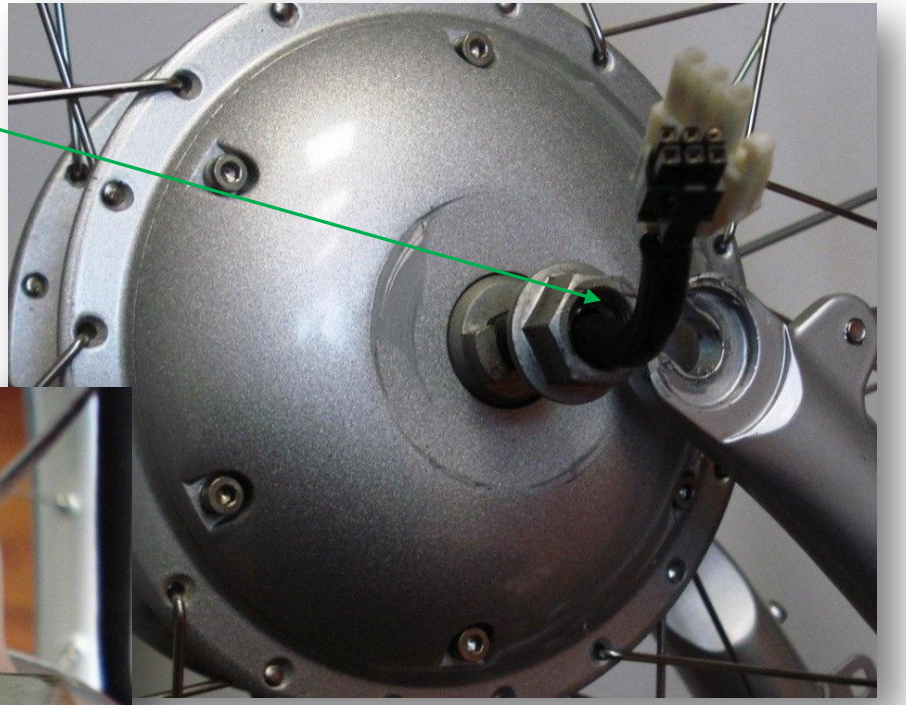
6. Pull the connector holder plate gently off.

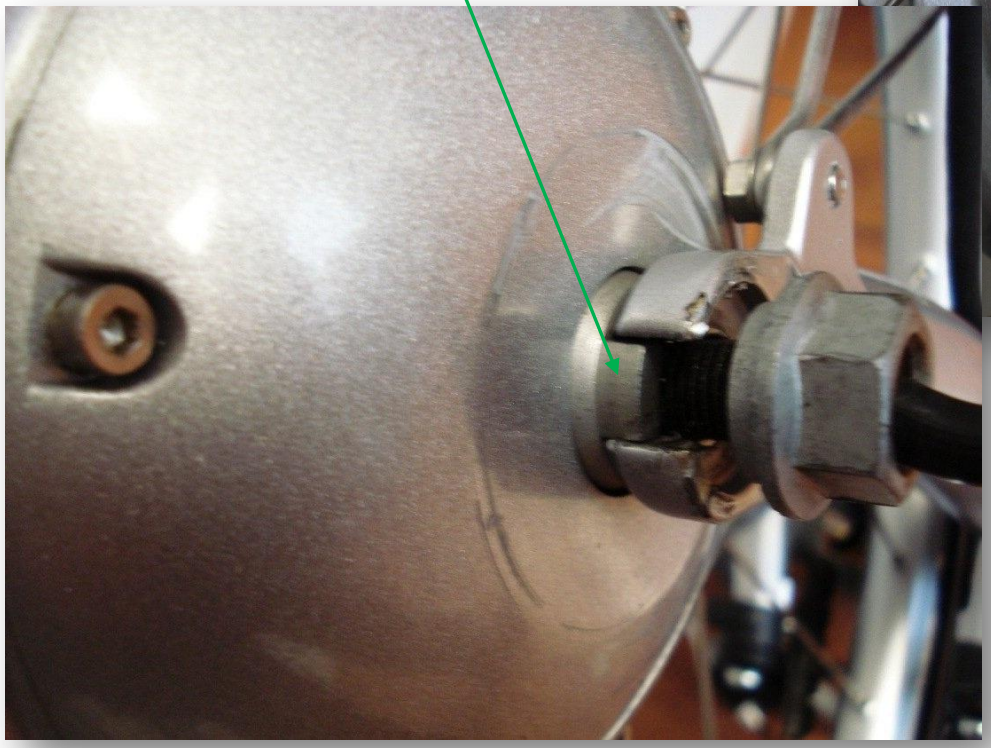




7. Loose the wheel screw on the other side and the wheel can be removed in the usual way.

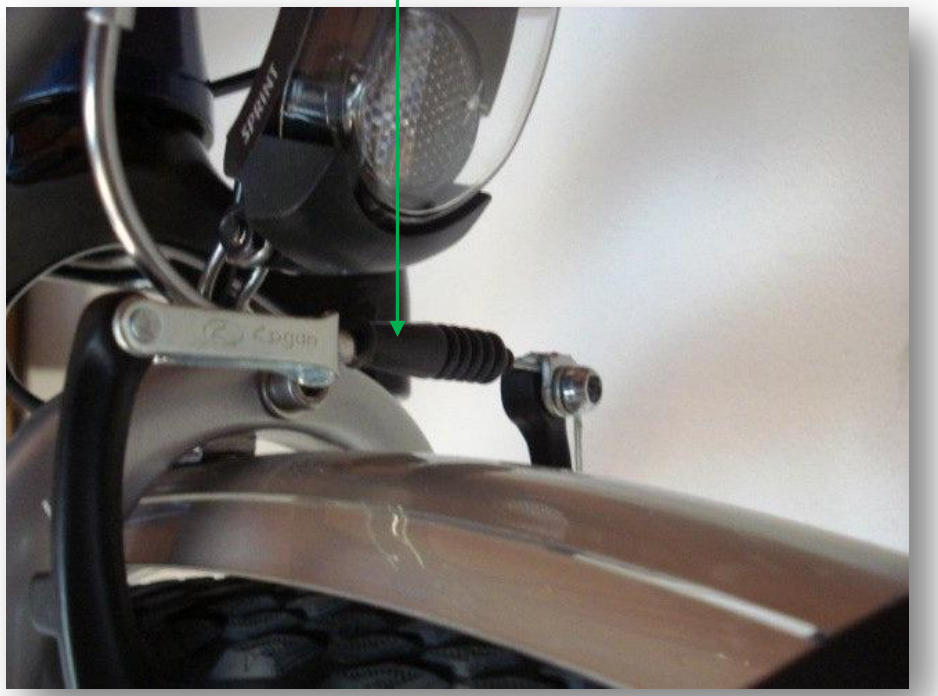
8. Take care for the positioning of anti-turn backstay when putting the wheel back.





9. Mind the position and direction of the connector holder plate when putting it back.

10. Re-install the brake cable.



Warning!

Leaving the brake cable uninstalled, may lead to serious accidents and/or injuries!

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